1897MNRAS..57..331.

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

VOL. LVII. MARCH 12, 1897. No. 5

SIR R. S. BALL, LL.D., F.R.S., PRESIDENT, in the Chair.

J. Harold Herbert, C.E., Hazlemont, The Boulevard, Nottingham, was balloted for and duly elected a Fellow of the Society.

The following candidates were proposed for election as Fellows of the Society, the names of the proposers from personal knowledge being appended :—

Arthur W. Clayden, M.A., F.G.S., F.C.S., F.R.Met.Soc., Principal of the Exeter Technical and University Extension College (proposed by Wm. Ellis) ;

Herbert Lovis Noel Noel-Cox, 2 Edinburgh Mansions, Victoria Street, S.W. (proposed by Richard Inwards).

One hundred and thirty-seven presents were announced as having been received since the last meeting, including amongst others :—

G. C. Comstock, studies in spherical and practical astronomy ; W. T. Lynn, Celestial Motions, 9th edition ; Remarkable Comets, 5th edition ; Remarkable Eclipses, 2nd edition ; T. J. J. See, Researches on the evolution of the stellar systems, vol. i. ; presented by the authors ; Report of the observations of the total solar eclipse 1896 August 9, in Novaya Zemlya, and lantern slides of the Corona, from negatives by MM. Kostinsky and Hansky, presented by M. Kostinsky ; Series of 12 enlarge-

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ments from negatives of portions of the lunar surface, presented by the Lick Observatory ; Photographs of the Great Sun-spot of 1897 January, presented by G. J. Newbegin.

Also twenty-five works from the library of the late Mr. Sidney Waters, and an equatorially-mounted camera with telephotographic lens, prepared for the observation of the total eclipse of 1896, presented by Mrs. Waters.

On the Mean Motions of the Lunar Perigee and Node.

By Professor Ernest W. Brown, M.A.

The following is a brief abstract of the paper :

The calculations necessary for obtaining a new development of the lunar theory having progressed to a stage at which it is possible to obtain very approximate values of the mean motions of the perigee and node of the Moon, it is of some interest to see how the results compare with those of Delaunay and Hansen. The motions are now obtained so as to include the second powers of the eccentricities and inclination. The remaining parts are estimated from Delaunay's results. Using Dr. Hill's values for the parts due to the figure of the Earth, the results are :

Mean annual motion of Perigee	$+146\ 435''\cdot 3$,
,, ,, ,, Node	$-\ 69\ 679\cdot 5$;

with a possible error not exceeding $2''$ in the case of the perigee, and $1''$ in the case of the node. Hansen's results, when corrected for the part depending on the figure of the Earth, give

$$+146\ 434''\cdot 9,$$
$$-\ 69\ 677\cdot 3.$$

The observations give

$$+146\ 435''\cdot 6,$$
$$-\ 69\ 679\cdot 5.$$

It appears that the difference of $2''\cdot 2$ which Hansen found in the case of the node is at least partly due to some error. Nothing can be said as yet concerning the question as to whether the Newtonian law is exact, an hypothesis treated by Professor Newcomb in his "Astronomical Constants." He finds that a difference of $+1''\cdot 40$ would result in the case of the perigee. The corrected value of Hansen gives only $+0''\cdot 7$, while that which I have obtained is $+0''\cdot 3$, but the error of the last result may possibly be as great as $2''$. The question awaits the deter-

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